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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,526	03/23/2004	Reinhold Hopfensperger	4191-000001	3433
27572	7590	08/04/2005	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C.			NGUYEN, NINH H	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	

3745

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/807,526

Applicant(s)

HOPFENSBERGER, REINHOLD

Examiner

Ninh H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-8 and 20 is/are rejected.
- 7) ☒ Claim(s) 5 and 9-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claim 16 is objected to because of the following: the claim should be recited as being depend on claim 11 to avoid lacking of antecedent basis for the limitation "the guide edge (20)" on the last line of the claim. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 - 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Wolff et al. (2,752,856)

Wolff discloses a pump (Fig. 1) comprising a casing 10 and in it an axially arranged impeller 16 wherein the casing has an axially placed inlet, and exhaust, a bottom section 164 with a bottom reference surface and a spiral-shaped compression space 160 located radially around the impeller that extends to the exhaust and which expands both in a radial as well as an axial direction towards the exhaust (Fig. 1); and the impeller has a cover disk (Fig. 1) facing the inlet and a supporting disk; wherein an axial and radial extension on the casing is inherently formed over at least 108° of the spiral circumference (Fig. 2); and a hollow cylindrical cup-like section is recessed (formed by element 164 and the casing) in the bottom section in an axial

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direction extending beyond the bottom reference surface in which the impeller is placed in such a way that an inner side of the supporting disk of the impeller is substantially flush with the bottom reference surface;

wherein the compression space expands in an axial direction beyond the bottom reference surface (Fig. 1);

wherein the casing has a cover 24 and the compression space expands in an axial direction toward the cover (Fig. 1).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff et al. in view of Ueda et al. (4,231,706).

Wolff discloses all the limitations except that the impeller blades do not have a swept-back outer edge along the impeller's circumference as claimed.

Ueda teaches a blower impeller having a base plate, a cover plate, and a plurality of swept-back blades to achieve high flow rate, pressure coefficient and high efficiency (col. 1, lines 15-20).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the pump of Wolff with the impeller having a plurality of swept-

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back back blade for the purpose of providing an impeller with high flow rate, pressure coefficient and efficiency as claimed.

Regarding claim 7, Wolff in view of Ueda discloses all the limitations except the outlet angle which forms a tangent at the outer edge of the blade with a tangent on the circumference of the wheel at a point on the outer edge is not smaller than  $35^{\circ}$  as claimed.

However, Ueda does teach that an increase in outlet blade angle of the blade impeller improves the efficiency of the blower. Therefore, the values of the blade outlet angle are considered result effective variables in design of impeller blades.

Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to the modified pump of Wolff with the blade outlet angle of less than  $35^{\circ}$  to improve the efficiency of the pump. In re Boesch, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 8, Wolff in view of Ueda discloses all the limitations except the inlet angle which forms a tangent at the inner edge of the blade with a tangent on the circumference of the wheel at a point on the inner edge does not amount to  $17-35^{\circ}$  as claimed.

However, Ueda does teach that the inlet blade angle directly affects the performance of the impeller (col. 3. lines 14-20). Therefore, the values of the blade inlet angle are considered result effective variables in design of impeller blades.

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Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to the modified pump of Wolff with the blade inlet angle of between 17-35° to improve the efficiency of the pump. In re Boesch, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff in view of Seinfeld (2,658,455).

Wolff discloses all the limitations except there are no boreholes in the supporting disk in the vicinity of the root of the blower as claimed.

Seinfeld teaches an centrifugal impeller comprising a supporting disk 16, a plurality of blades circumferentially arranged on the supporting disk, and a plurality of balancing holes 18 formed on the supporting disk to equalize the pressure in the front and back of the supporting disk 16 (col. 2, lines 7-10).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the pump of Wolff with a plurality of balancing holes on the supporting disk for the purpose of equalizing pressure in the front and back of the supporting disk as commonly done in the art.

***Allowable Subject Matter***

7. Claims 5 and 9-15, and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claim 16 would be allowable if rewritten to overcome the objection set forth in the "Claim Objection" section of this Office action and to include all of the limitations of the base claim and any intervening claims.

***Prior Art***

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure and consists of 1 patent.

Carter (2,766,698) is cited to show a centrifugal pump having a cylindrical recess in the casing.

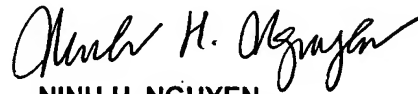
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (571) 272-4823. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (571) 272-4820. The fax number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, please go to <http://pair-direct.uspto.gov> or contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).

  
NINH H. NGUYEN  
PRIMARY EXAMINER

Nhn  
August 2, 2005